CLAIMS

1.   A gain adjusting method for a servo control device
providing speed control of inputting a difference between
speed feedback supplied from a servo motor and a command
value to output a torque command,

the gain adjusting method comprising the steps of:

increasing a speed loop gain to detect vibration
at each of a plurality of points over a movable range
of a machine,

decreasing the speed loop gain to detect the gain
when the vibration becomes still as a maximum value, and

providing a set gain value corresponding to a
machine.

2.   The gain adjusting method for a servo control device
according to claim 1, wherein

the set gain value is a minimum value of gain values
detected at the plurality of points.

3.   A method for adjusting a controlled gain in a servo
control device for driving a servo motor including a
vibration detecting member for detecting vibration of
a control system while the control system stops,
comprising the steps of:

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performing   running   such   as
acceleration/deceleration at an increased controlled
gain, and

decreasing the controlled gain, when the vibration
is detected by the vibration detecting member while the
control system stops.

4.   The method for adjusting a controlled gain according
to claim 3, wherein
the vibration during stopping is detected from
torque in the normal running is detected, and

when the vibration is detected by the vibration
detecting member,

the controlled gain is decreased.

5.   The method for adjusting a controlled gain according
to claim 3, wherein
the vibration during stopping in the normal running
is detected, and

when the vibration is detected at an increased gain
by the vibration detecting member,

the gain at this time is determined as a maximum
gain.

6.   In a servo control device for driving a servo motor comprising:

a vibration detecting member for detecting vibration in a control system, and

an exciting member for adding, to a torque command, simulated disturbance torque giving vibration at a predetermined level at an increased controlled gain,

a method for adjusting a controlled gain, comprising the step of:

selecting a control method such as an observer in a limited gain extracting method,

the limited gain extracting method including the steps of:

determining as a limited gain the gain when the vibration exceeding the predetermined level is detected by the vibration detecting member,

repeating the processing of giving the excitation having an adjusted magnitude by the exciting member,

detecting the vibration by the vibration detecting member, and

adding the simulated disturbance torque while increasing the controlled gain, until the vibration at the predetermined level is detected.

7.   The method for adjusting a controlled gain according
to claim 6, wherein

in selecting the control method such as the observer
in the limited gain extracting method, the control method
5   with a higher value of the limited gain is selected as
an optimum control method.

8.   The method for adjusting a controlled gain according
to claim 7, wherein
10   the control method with a higher value of the limited
gain is selected as an optimum control method,
the method, further comprising the steps of:
increasing the simulated disturbance torque,
detecting the margin of the controlled gain where
15   the vibration at a predetermined level is detected, and
selecting the control method providing a larger
margin, wherein
the control method with the higher value of the
limited gain is selected as the optimum control method,
20   if pertinent control methods have equal limited gains.

9.   A gain adjusting method for a servo control device
providing speed control of inputting a difference between
speed feedback supplied from a motor and a command value
25   to output a torque command,

the gain adjusting method comprising the steps of:

implementing tuning in such a manner that a servo control device for driving a servo motor is run,

generating a command by an external operation of an operator and a sequence of tuning build in the device, and

adjusting the gain by the obtained information upon running.

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